Slow-CT* are fused. Around the tumor will appear its movement blurring, it is the ITV. (g) We design treatment on the Slow-CT*. (h) In the ConeBeamCT the tumor blurring must not exceed the PTV. (i) Patient is treated on Elekta-Synergy linac. (j) After every treatment we repeat the acquisition IGRT and check the modifications during the treatment.
Results. Up to date a total of 10 patients have been treated, 9 primary tumors and a local relapse: 3–5 sessions and 40–50 Gy dose range. CT/PET images show complete response in 8 patients after 6 months. There were no G3 pneumonitis and no G2 esophagus toxicity. The systematic error of intra-fraction movements were 0.4 mm, 0.5 mm and 0.9 mm (*x*,*y*,*z*) and the random error were 0.5 mm, 0.5 mm and 1 mm (*x*,*y*,*z*). Only in one patient the treatment time exceeded 12 min.
Conclusions. ExaCradel and ConeBemaCT form a precise and rapid system as SBRT technology.

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Hypothalamic hamartomas: Clinical experience in 23 cases treated with Gamma-Knife surgery

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Hypothalamic hamartomas (HH) arise as a result of an incorrect embryonic cell migration. Most patients with a HH are asymptomatic. Gelastic seizures in association with HH were described some years ago and the majority of these patients present medically refractory epilepsy. They can develop a severe epileptic encephalopathy associated to behavior and cognitive disorders and precocious puberty (related to secretory granules). Surgery can be an effective treatment but it has been related to important morbidity and mortality because of their location and relation to critical structures (optical pathways). The objective of the present study is to evaluate our results with Gamma-Knife surgery (GKS) treatment in these lesions. *Methods*. We have treated by GKS 30 patients with HH from 2002 to nowadays. We retrospectively reviewed our prospectively collected data and analyze 23 of these patients. This series includes 14 women and 9 men, presenting lesions from 8 cc to 0.2 cc. Mean age was 17 years old (ranged: 16 months to 45 years). For diagnosis and planning Video-EEG, CT and stereotactic MRI (T1, T2, Flair and T1 post-gadolinium, using axial, coronal and sagittal sections) were used.
Results. 8 cases had been operated previously. The mean coverage dose has been 18.5 Gy. More than 70% of the patients had a positive outcome, even though most of them still need medication. After 2 years follow-up, 5 cases were re-treated due to medically refractory symptom persistence or reappearance. The mean coverage dose used was 17 Gy. In 2 of these 5 patients a favorable evolution was observed.
Conclusions. In the treatment and control of medically refractory epilepsy secondary to HH we considered GKS as an effective, safe and reliable option. Prognostic factors that should be considered are evolution time (the precocity of treatment) and other epileptic focus absence. Other factors are lesion size and relation-distance between the HH and the critical structures. The possibility of achieving a correct coverage dose of more than 17 Gy irradiating the entire lesion depends of them. These facts have been confirmed in our series.

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Modelling and commissioning of a radiosurgery cone system for trigeminal neuralgia

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Objective. LINAC-based radiosurgery is commonly used for trigeminal neuralgia treatment. Due to the small size and spherical or elliptical geometry of the target, small cones are suitable for this technique.
Materials and methods. A radiosurgery cone set (Brainlab) of diameter 5, 6, 7.5 and 10 mm was modelled for a 6MV linac PRIMUS (Siemens). Reference dose was measured using a camera PTW Farmer type 30013. Output factor, PDDs and OARs were measured for each cone in a PTW water phantom MP3 using a diode detector PTW 60012. Correction in output factors is up to 6% for the cone of 5mm. For commissioning the TPS: accuracy of monitor units (MU) calculations, isocentre localization, punctual dose with MOSFET, and dose profiles with Gafchromics films.
Results. We performed several verifications: (1) Manual calculation of MU performed with measured data shows a maximum difference of 1.3%. (2) We used a Gafchromic EBT2 placed in the stereotactic localizer with a pin to locate isocentre. After a CT scan, pin delineated and used like isocentre to deliver the treatment. Isocentre localization was less than 0.5 mm. (3) We scanned an anthropomorphic Alderson Rando phantom head with a MOSFET detector placed inside. We localized the CT scan using iPLan, marked the isocentre at the MOSFET and delivered treatment. The dose agreement was for the 10-mm cone, lesser than 5% (MOSFET uncertainty: 3%). (4) A film was placed at depth of 15 mm in a water phantom and an arc of 120° was delivered. We compared measured data with TPS calculation using OmniPro® (IBA). A good agreement is showed for inplane and crossplane.